

927

927

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The POWER

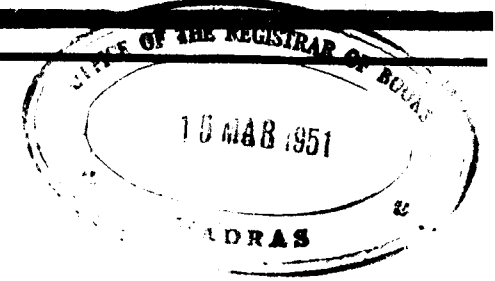
A MONTHLY JOURNAL

EDITOR: P. S. PILLAI, M.A.

Vol. I.
No. 6

MARCH 1951.

Single Copy. As. 8.
Annual Subs. Rs. 6.

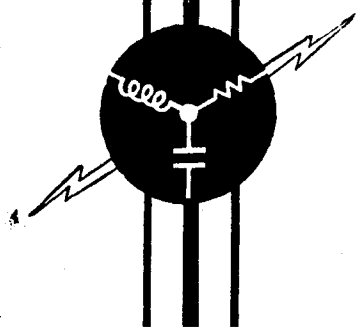


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1. Editorial
2. Special Articles
3. Consumer's Companion
4. Trends of Trade
5. Books and Brochures
6. News and Notes
7. Here and There

★ ★ ★





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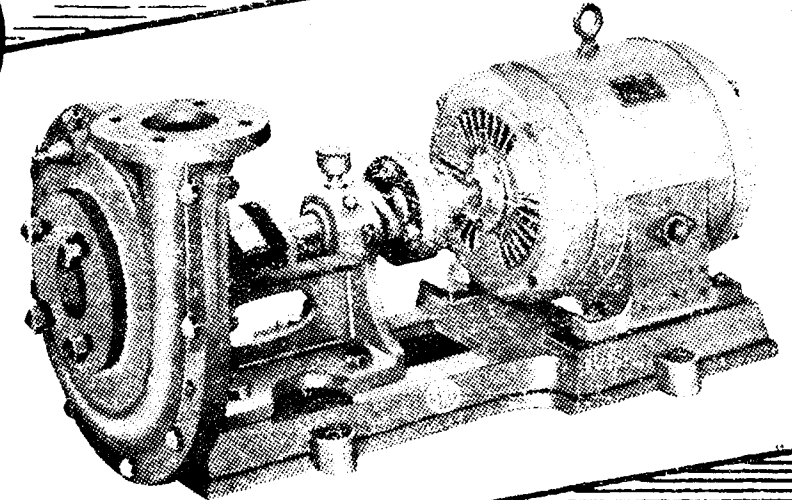
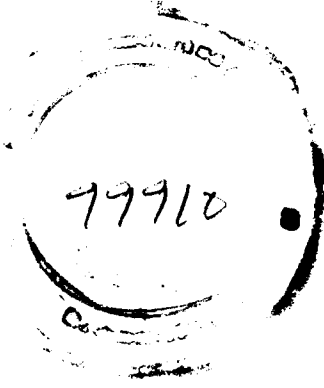
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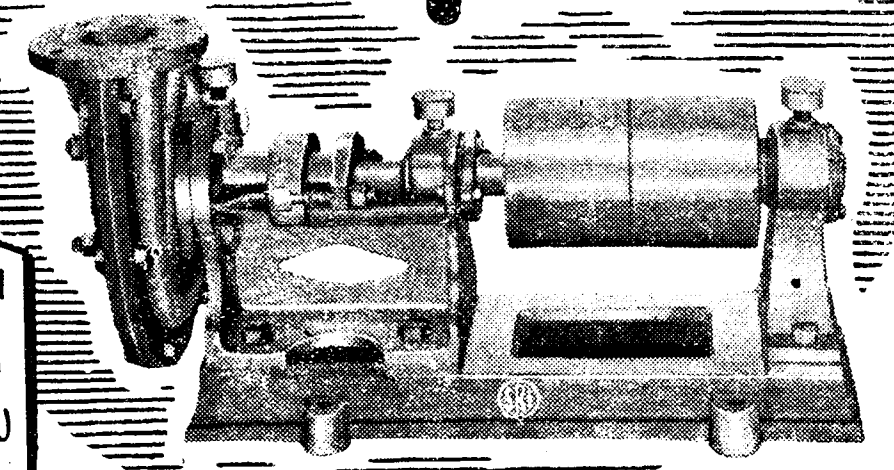
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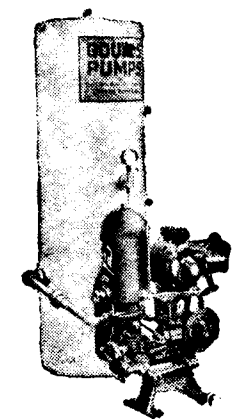
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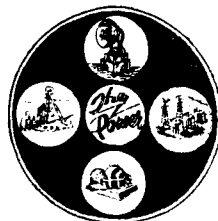
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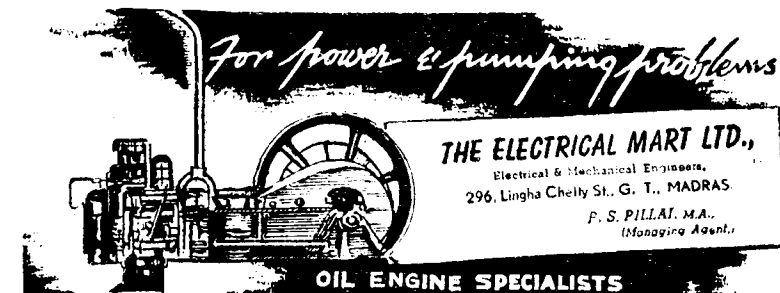
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Days.	I Week.	II Week.	III Week.	IV Week.	V Week.
Sunday	...	4 h	11 h	18 h	25 h
Monday	...	5	12	19	26
Tuesday	...	6 h	13	20	27
Wednesday	...	7	14	21 h	28
Thursday	1	8	15	22	29
Friday	2	9	16	23 h	30
Saturday	3	10	17	24	31
					Total.

h:—HOLIDAY.

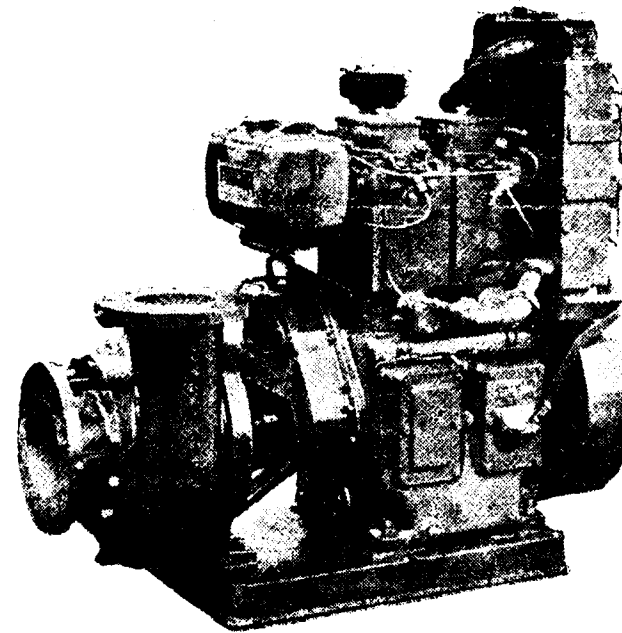
Electrical Measures.

Ampere	—Unit of current.
Volt	—Unit of electro-motive force.
Ohm	—Unit of resistance.
Coulomb	—Unit of quantity.
Farad	—Unit of capacity.
Joule	—Unit of work.
Henry	—Unit of inductance.
Board of Trade-Unit	—1,000 watts 1 hour 746 watts: 1 horse-power.

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Avoid electric shocks.
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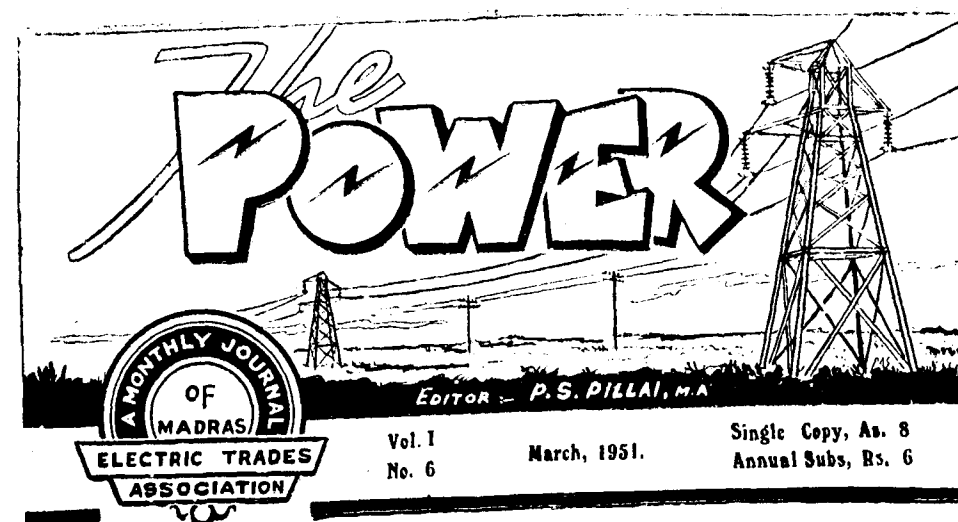
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addressed to the Editor and Publisher
P. S. PILLAI, M. A.,
296, Lingha Chetty Street,
G. T., MADRAS. 1.

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Message Received for the "POWER"

From

The Hon. P. S. Kumaraswamy Raja,
Chief Minister, Govt. of Madras.

The Hon. C. Perumalsami Reddi,
Minister for Industries,
Govt. of Madras.

The Hon. Bhaktavatsalam,
Minister, Govt. of Madras.

G. Sundaram, Chief Engineer,
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Hon. J. Sivashanmugam Pillai, Speaker,
Madras Legislative Assembly.

K. MADHAVA MENON,
Minister for Education & Law,

Fort St., George,
Madras,
27th February, 1951.

Dear Sir,

It gives me great pleasure to know that the newly started journal "Power" has become popular in a short time. Electricity manifesting itself in so many forms is the pivot on which modern world turns and it is fast becoming a primary need of everybody to-day. I wish the journal every success and popularity.

To

Sri. P. S. Pillai, M. A.
Editor.

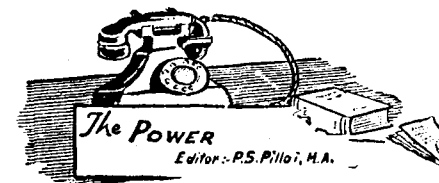
Yours Sincerely
(Sd.) K. MADHAVA MENON.



Vol. 1

March, 1951

No. 6



MEN & MACHINES

Defence Measures & Industrial Expansion.

The role of defence in any country against aggression is vital in these days of international conditions under which war is a common feature of the world's way of living. It is true that we are peaceful and peace-loving free nation and try to live on the teachings of world teachers like Gandhiji, Jesus Christ, Muhammad, Buddha, Sankara, Ramanuja, Madhwa, Tiruvalluvar. But we cannot avoid facing the hectic fanaticism and uncompromising bigotry of Power-mindedness that are visible today, in spite of the fact that the conflict in the political and economical ideologies is tried to be laid at rest by the United Nations Organisations, functioning as a Parliament of Nations and a Federation of the World. National qualities like patriotism and courage count a great deal in ideological warfare but industries determine in the

main whether a country stands up to aggression or goes under. The other nations have already begun their Rearmament programme while we are yet to make a beginning in this direction first by strengthening our defence measures for this vast country.

To take stock in brief of our Republic Armed Forces may not be out of place here. We have three arms—the Army, the Navy and the Air Force. The first year of the Republic saw the reorganisation of the Army. The Regular Indian Army with its three commands, The South, East and West, is now entirely officered by Indians, from the Commander-in-chief down to the Junior most Subaltern excepting a few temporary appointments requiring specialised experience. The Indian State Forces maintained by the rulers of Indian States were intergrated. Side by side a reserve Force known as the Territorial Army is also being built up. Organised into Provincial and Urban units, the Territorial Army consists of units of Infantry, Artillery including Anti-Aircraft and coast Defence, Armoured Corps, Engineers including Railway and Port units etc. The primary role of the Territorial Army is to form a second line to the regular Army. India's Navy is still a small force growing from strength to strength. With the acquisition of some new

ships the Indian Naval Squadron was organised into a Destroyer Flotilla under the command of a Captain (Destroyers) and a Frigate Flotilla under the Command of a Captain (Frigates). There is a Rear-Admiral in over all Command of the Squadron including the flagship, the destroyers, frigates and other ships. The Indian Navy has its own Commander-in-Chief and nationalization of the Navy takes place step by step. The Indian Air Force, the youngest of the three services, is only in its teens. The service is expanding at a rapid rate consistent with the armed defences of the nation. It has its own Commander-in-Chief. The Supreme Command of all the three Services become vested in the President of the Union. The administrative control is in the hands of the Ministry of Defence and the Armed Forces Headquarters.

Training schools in the respective spheres have been established to train for Army, Navy and Air Force. Experiments have been carried out for the production of new stores for the three services. The largest single scheme was the settling up a prototype machine tool factory intended to provide machine tools for feeding the other ordinance factories. Simultaneously the development of Defence Science had also received the attention of the Government, and they work in close touch with other organisations engaged in scientific or industrial research and activities.

Our contention is, more and more encouragement should be given both by Government and private enterprise (1) to start additional basic industries and (2) to expand the existing industries to attain Self-sufficiency Stage. The course open to obtain means of defence is either to import manufactured equipment or alternatively to attempt to produce more equipment in the country. The basic objection to the first line of action is money

spent on imports cannot be recovered and difficulties in proper purchase are many. We cannot allow our ordinance factories and other defence factories entirely depend on outside supplies for producing the simplest ammunition such as cartridges, shells, and grenades etc.

A number of important industries such as Steel, Textile, medicine, electricals, tools, machinery, etc. do certainly come into the picture of defence measures. Let us examine among these the Electrical Industry which is more our line. Many of us are inclined to be complacent about this industry, perhaps because of illusions concerning the manufacture of electric motors, transformers and switchgears, etc. A closer examination will reveal that we have limited sources of supply of components and raw materials such as winding and resistance wires, Silican Steel etc., which go into the making of electrical apparatus. We have been emphasising the importance of Power-electrical and mechanical—in all modern industries.

The following is the statistics of the production in this line for 1950 in our country:—

	Rs. approxi-
Electric Motors (H.P.)	73,921 mately.
Transformers (upto 1000 K.V.A. and 22 K.V. on H.T.) K.V.A....	1,500,000
Electric lamp (Bulbs) 1000 Nos.	13,000
Electric Fans 1000 nos.	298
Diesel Engines Nos.etc.	4200

This position is far from satisfactory indeed. The production of a large range of modern apparatus and tools used in defence measures, from toys to car parts, is a necessity for which suitable steps should be taken. It is gratifying to note that the Standing Committee of the Central Advisory Council of Industries has made many recommendations to attain the maximum production possible. U. S. A.

emerged as a great industrial power due to 1914-18 war. Today Australia is utilising her war funds to expand on an enormous industrial scale. A certain proportion of defence funds could be wisely allocated to expand basic industries which will aid the production of defence materials. We are a part of the world's democratic system and we grow each day in political influence. And we need to dedicate ourselves to this great task of further building up of our defence measures at the present time when the balance of power has altered very radically and the axis is now in the old world.

Our Association Meeting.

An ordinary meeting of our Madras Electric Trades Association was held on 22-2-51 at the office of Messrs. T. R. R. Swamy & Co. Ltd., Thambu Chetty Street, G. T. Madras. It was attended by representatives of Messrs. T. R. R. Swamy & Co. Ltd., Modi & Modi, M. T. Rajen & Co., The South Madras Agencies Ltd. and the Electrical Mart Ltd.

Inter alia, it was resolved that the following points might be brought to the notice of the Import Control Enquiry Committee directly or through Chambers of Commerce regarding the recommendations by the committee and the decisions thereon by the Government.

- The nature of the application form of the import license should be further simplified.
- The license policies for the various periods should be

announced sufficiently in advance.

- The application should be disposed of and the licenses should be issued within a fortnight of their submission and not after a long delay as being done at present.
- The arrangements and the descriptions of the various items in the Schedule should be more specific and clear to avoid resulting ambiguities found at the time of clearance of goods from the customs.
- In view of the acute shortage of electrical accessories and the indigenous manufacturers not coping with demands, the issue of licenses for the same should be liberlised.
- The meeting further held the view that the present prices of Goods Ordinance by the Government regarding electric bulbs was unnecessary as the concerned manufacturers are able to cope with the demand of the same in the country and that the bulbs are available even in retail to consumers at prices much lower than those fixed by the Government.

With a vote of thanks proposed by our secretary Mr. C. L. Modi, to our president Mr. T. R. R. Swamy and our colleagues, the meeting terminated.



Special Articles

(By A. K.)

he Master and the Servant — Water.

Water and People go together. Light and Air, Land and Water are the gifts of nature. The last two are limited in quantity and determine the limit of the population that can be sustained in any country. Such limits depend on the success we achieve in conserving them by preventing wastage and extracting from them the maximum quantity of food and other necessities of life. In the early stages of civilization, the countries were sparsely populated. The needs of the people were fewer. There was plenty for all. To-day population has grown; civilization has advanced with its multifarious uses of water. Water in flood is a fierce master, water tamed to irrigation and power development is a faithful servant. Rivers do not recognise artificial political boundaries and more often than not flow through areas under the jurisdiction of different governments. Many of them are thus inter-state rivers and some of them are also international. The problems created by such rivers can, therefore, best be tackled on an inter-state or an international basis. Thus we find the real reason to exist for international conferences both for exchange of views and for joint action on problems connected with rivers, such as the C. A. F. E. Regional Conference on flood control etc.

The loss by floods may be vast indeed. The damage done by floods in China beginning from that of the Yellow River in 2227 B.C. has seen the toll of life alone running

hundreds of millions. In India we have been stricken very often due to fierce floods. Illustrations are many on the point. In the earliest civilization it was the floods in the Indus which over-whelmed Mohen Jo Doro. Recently the Damodar, the Kosi and other biggest rivers in our country had breached and had caused damage to property worth crores of rupees. The worst calamity of such damage had been loss of millions of tons of food and food-grains.

All these tend to show the tasks which the engineers and the economists are faced. The problems like flood control, irrigation, navigation and power generation involved in multi-purpose schemes come into the picture. Such problems involve huge money and fierce determination in both the governments and people to drive on with the jobs. The six year plan for India contained in the Colombo plan thus gives these works a high place. The engineer is a project-maker and a project-builder. But his work is subject to many limitations such as administrative controls, payments difficulties etc.

Water, the faithful servant has still been inadequately employed. In the Indian Union only 5 per cent. of the total run off is used for the purpose of irrigation and power generation. Out of an estimated 1355.96 million acre feet, we are using only 75.65 million acre feet. It is happy augury that the River Development schemes now rest with the Government of India, who can initiate and co-ordinate schemes in consultation with provincial Governments. The planning commission's recent irrigation plan can be implemented only under favourable circumstances. If existing irrigation facilities can be doubled and hydro-electric generation can be trebled, in the course of fifteen years, we will have ample cause for satisfaction. Politically as well as financial-

ly these are the possible targets. They would mean that the present irrigated area of about 47 million acres might in fifteen years become 95 million acres and that power now reckoned at 1.6 million K. W. would be 5 million K. W. We may thereby expect with show of reason that in 15 years time 5 per cent. of utilisation of national income would be for agriculture and 5 per cent. for power which would mean doubling irrigation and trebling power. All these developments would mean the necessary expenditure reckoned up to about Rs. 1,500 crore at present prices. The development of the resources by application of up-to-date scientific methods has been done for the rivers like the Amazon, the Nile, the Rhine and the Mississippi in other countries. If

India's water and power are to be properly utilised, there must be far more team work between the public and private sector, between Engineers and Industrialists.

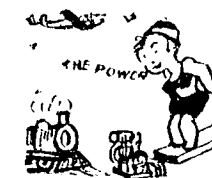
A lay-man—we consider the politician as lay-man—cannot always see in this battle of competing uses the wood for the trees. It is often the spectacular work either of water irrigation or power generation which attracts his eye. It is necessary and natural therefore that the ministers and the politicians are likely to come under the spell of the galaxy of irrigation and power engineering talents and should take cautious note of water both as a master and a servant. Then the place of Republic India will be a landmark in the history of human race.



Performance of "POWER"

Your problems and difficulties are solved. You are posted with information and references to over-come your obstacles in trade etc. and also to expand your business by making contact with manufacturers and traders in India or abroad. Free Service to regular Subscribers only.

ASK THE



ABOUT IT

Consumer's Companion

[The consumer of Power-Electrical and Mechanical - has every reason to keep closely in step with the fundamentals of this power and wide-spread modern applications. All calculations and complicated formulae have been scrupulously avoided but practical hints and notes in the form of elementary treatise are given in the "POWER" to be of help to the common consumer.]

FOR HOME & HEARTH.

Copper, a good conductor of electricity - Why?

Man has been trying to understand and explain electricity ever since the Greek Philosopher Thales made his first electrical experiments in the 6th century B.C. The Atomic Theory explains most of the things about electricity. The use of copper in electrical appliances is due to the fact it has an electron which can be freed from its atom very easily; in fact the electrons are held so loosely to the atoms in a piece of copper that they can hardly be said to be 'held' at all. They wander about from one atom to the next and it is their mobility which makes copper such a good conductor of electricity. When a current starts to flow extra electrons are pushed into the conductor at one end; the electrons push against the electrons nearest them, which in turn push against others, right through the conductor. Silver has similar properties but due to its high cost and meagre availability, is not made use of in electrical fittings.

The Electric Flat-iron.

Among the many applications of electric heating, the one which perhaps takes foremost rank in a woman's judgment is the electric flat-iron. The ordinary household iron consists of a heavy iron casting which retains the heat for a time; that is to say, it is a heat-storage device. The electric iron, on the other hand, is a heat-supplying device. The household iron stores the heat for a time, but soon has to be replaced on the hot stove to accumulate another store. The electric iron, instead of being dependent on the storage of heat, contains a source of heat within itself in the form of electric current which flows into it as long as the switch is closed.

The advantages of electric iron are

- (1) No need to get up a big fire for the purpose of ironing.
- (2) No waiting is required.
- (3) No necessity to have more than one iron in use.
- (4) No stooping over the hot stove to change one iron for another.
- (5) No danger of getting the clothes smeared by a dirty iron or by smuts from the fire.
- (6) The electric iron gets hot enough to begin ironing in three or four minutes and can then be used continuously until the work is finished.
- (7) If a cooler iron is required, the switch is turned off, and the result is, of course, the required cooler iron.
- (8) The electric iron can be used in the kitchen, in the nursery, in the bed room and in short anywhere.

As regards the weight of the electric iron chosen, 6 lbs. will be found useful for ordinary purposes. If lace and similar light materials are to be ironed, a smaller iron of 3 lb. or so will be useful. For travelling purposes it is well to have an adjustable voltage iron.

FOR FARM AND FACTORY.

Dismantling an oil engine for Re-erection elsewhere.

Many old oil engines are to-day being purchased for re-installation due to the fact that the production of new engines is not able to meet the demand and the limited financial resources of many consumers preclude the buying of new engines.

It is a very different story when the dismantling is handled by a local odd-job man or one who has spared little thought for the unfortunate engineer who has to manage the re-erection.

The following are some of the hints useful in this direction :-

Any drawings, plans or instruction books concerning the engine should be sent along in advance.

A rough freehand sketch showing the position of various auxiliaries (such as compressor, fuel tank etc.) should also be sent in advance.

With a lettering paint brush, number the cylinder heads and cylinders so that correct pairing becomes easy. Where separate cylinders are used, the bedplate and cylinders must likewise be numbered.

Flywheels should be marked regarding direction of rotation, the side of the wheel to face the engine.

Bearing caps and bearings should be marked correctly.

In complicated systems of forced lubrication labels might well be attached to each individual pipe.

Rusty parts should be oiled and cleaned. Detachable parts require very careful handling.

Unless the dismantling is done intelligently there is a danger that the total cost of buying and installing old engines will rise above the cost of brandnew equipment.

Tractors.

The time has gone when hand power was sufficient to meet the needs of the agriculturist. Power in some form or other - electrical or mechanical - is essential if the land is to produce sufficient wealth to support those employed on it. In India to-day the cry is for **Food and More Food** and we are rationed in food grains, sugar and other essential commodities. Thus we are faced with major problem - how to feed ourselves. The other countries in the world extensively use tractors and cultivate large areas of land in short time and at minimum cost. Though India is a land of Agriculture, there are still vast tracts of undeveloped fertile lands. Moreover rainfall is uncertain. The solution to the Indian food problem is the development of unfarmed lands by latest methods, and inducement to young farmers to stay on in the land rather than migrate into cities to work in offices and factories. All these can be accomplished by the extensive use of tractors and modern farming equipments. The progress of this half century has replaced drudgery by Power. More and more farmers are replacing horses and bullocks with tractors and their implements. The main operations in the farm are ploughing, cultivating, sowing, pump-

ing water, harvesting etc. The tractors with their implements and equipments which include the Rotary Plough, Sickle Mower, Thresher, Harvester, Fertiliser Distributor, Cultivator etc, do all kinds of jobs in the field.

There are many makes of tractors suitable for farms of area up to 50 acres, from 50 acres to 100 acres, 50 acres to 300 acres, 200 acres to 1000 acres etc., and we shall here detail the 'Oliver Tractor' offered and serviced by Messrs. William Jacks Ltd. Madras.

- (a) Oliver 60 KD Standard Tractor fitted with Pneumatic tyres, Engine equipped for use with power kerosine developing a horse power of 16.5 complete with regular equipment..... Rs. 7475 -.

- (b) Oliver 77 KD Standard Tractor fitted with Pneumatic tyres, Engine equipped for use with power kerosine developing a horse power of 28 complete with regular equipment..... Rs. 10,250/-.

- (c) Oliver 88 KD Standard Tractor fitted with Pneumatic tyres, Engine equipped for use with power kerosine developing a horse power of 38 with regular equipment.....Rs. 11,500/- and other types are the finest in farm machinery with their respective quotations subject to their confirmation.

For further details Ask William Jacks about it with the following details - area of each plot, total area of lands, types of crops raised and other connected data. You will get a ready response much to your benefit and advantage.



Trends of Trade

[To-day the world of Trade offers more and better opportunities to ambitious men and women, anxious to succeed in life than any other type of career. But competition is keen and in business as in everything else the biggest rewards go to those who have taken the trouble to perfect themselves and to increase their knowledge and efficiency.]

With the professions so over crowded, more and more of the best brains in the country are embarking on business careers but the big prizes and the highest rewards go to the properly trained executive, the man who knows his job and can apply his knowledge perfectly and thoroughly. The expert moves on to the top of his profession, while others have been content to drift. The "Power" will prove that Pride lies in Performance.]

International Trade.

An ideal policy for a country is to achieve the highest possible prices for exports and the lowest possible prices for imports. But such conditions cannot always be assumed. The State monopoly in Russia is described to be the achievement of this object.

In India the uncertain trends and the decline in terms of trade for the last few months indicate that the future will need to be very carefully watched. Our dependence on imported raw materials and food renders our position extremely vulnerable. We found difficulty in obtaining sugar imports and we paid high for the actual imports: the soaring prices of raw cotton confirm also such apprehensions. To maintain the terms of trade, we should

either be supplying goods and services needed for rearmament or war, or we should be able to satisfy the certain demands of third parties which the countries engaged in the war are unable to handle. Simultaneously we should prevent the general increase in the prices of internationally traded goods - rather than an increase in the prices of our own exports. This world wide change is common and India has to undergo this changing terms of trade.

Government Licensing Policy—January-June 1951.

Licensing Areas:—

A. Dollar Areas.

- (1) U.S.A.
- (2) Canada.
- (3) Other American Countries.

B. Hard Currency Area - Japan.

C. Soft Currency Area - All other countries excepting Pakistan and the Union of South Africa.

Types of Licenses:—

- (a) General Licenses.
- (b) Licenses for Japan.
- (c) Soft Currency Licenses.
- (d) Specified Licenses.

Classification of Applicants:—

- (1) Established importers.
- (2) Actual Users of goods.
- (3) New-Comers.

For detailed particulars refer to the Government of India's Public Notice No. 150-I.T.C. (P.N.) 150 of 15-12-1950 costing Rs. 3/- from the Import Controllers.

Fiscal Commissioners' 1949-50 Report.

The Fiscal commission makes the following observations regarding special significance to the Electrical Industry & Trade.

India's water-power potential is less only than of the U.S.S.R., U.S.A. and

Canada but the present generating capacity is only 1.5% of the potential compared with 22%, 54% and 20% in Russia, U.S.A. and Canada.

If all schemes now under active consideration or execution by the Central or State Governments, are completed before 1958, the expected generating capacity at the end of that year will be 4.5 million kilowatts. If Rs. 500 crores is spent upon completion of proposed power projects a much larger sum would be needed to provide the domestic or industrial apparatus and equipment to utilize the power produced.

In the planning of industrial development the commission suggests the following order.

In the public sector - (1) the essential defence industries (2) industries connected with the development of natural resources (e.g.) water power (i.e.) the multipurpose projects etc. (3) public utility industries (e.g.) railway transportation, electric power generation etc. (i.e.) heavy key and basic industries.

In the private sector - (1) the increase of production of existing undertakings etc.

On Industrial Front.

We have neither praise nor blame for the structure of Indian Industry. There is a constant jibe at the Indian industrialist that he is a mere speculator and is no match for his foreign rival. It is not wholly true. In our productive system, our cost structure, we are as healthy as that of any of our foreign competitors. We produce to-day the cheapest steel, the cheapest cloth and the cheapest sugar. There are many lines in engineering where we can certainly hold our own. Our relative low costs with alleged inefficiency seems to be only a paradox. The explanations is to be sought in the conditions in which Indian Industry now operates.

Around the Market.

During the fagend of January the Indian Markets assumed a firm trend due to Perking's rejection of the peace offer. Leather merchants' association had protested against the levy of export duty on hides and skins and the proposal of restriction of exports of tanned stuffs. In the Madras Stock Exchange the factors that counted were (1) Dwindling hopes of early end of Korean hostilities (2) Non-materialising the expected official announcement regarding rubber price increase and (3) the increase in the price of textiles. In the planting section Rubber shares met with heavy selling. The groundnut market was firm and forward business was small. The money market in general became very tight.

The budget fever falls usually in February which dawned consequently with stoical indifference. The Finance Ministers both at the centre and in the States knew very well that it was useless to milk the over-milked cow, though the possibilities of newer techniques of taxation might not be ruled out. The Government of India had to find money for implementing the policies Welfare States and for financing food subsidies. Many provinces had introduced prohibition thereby lopping off their substantial revenue and found themselves in melancholy position. The bridge between mounting expenditure and declining revenue was found difficult to build both for the State as well as for the Society.

The delay on the part of Central Government regarding the announcement of Rubber price increase caused embarrassment added by the increase in tyre prices by 15%. The raw-cotton's ceiling price was increased by Rs. 150/- and its supply position had become grave. The New-York Cotton Trade remained suspended. Much to the relief of textile

industry, where aggressive selling of mill shares was visible and pronounced, the Textile Commissioner announced an increase in cloth prices - ranging from 11-17½% for coarse cloth and 9½-11¼% for medium cloth.

A new stage was reached in the cold war in Korea with the United States branding China aggressor, the fortunes of the war were alternating. The markets in London and New-York were void of features. The Bombay and Calcutta Markets were showing reserve. Further developments were therefore watched with intention and interest.

Appendix.

Statements of some important licenses issued.—

United Kingdom.

MADRAS CENTRE:—

- January/June 1951.
Indian Marketing & Distributing Co. Ltd. (E.I.)
4983 Domestic Refrigerators complete.
- July/December 1951.
Modi & Modi Lingha Chetty Street. (E.I.)
1227 Domestic Refrigerators complete.
- January/July 1951.
Modi & Modi, Lingha Chetty Street. (E.I.)
1227 Domestic Refrigerators complete.
- July/December 1951.
General Radio & Appliances Ltd., Mount Road. (E.I.)
2856 Domestic Refrigerators complete.
- January/June 1951.
General Radio & Appliances Ltd., Mount Road. (E.I.)
2856 Domestic Refrigerators complete.
- January/June 1951.
Popat Jamal & Sons, Broadway. (E.I.)
2778 Electrical Inst. Apparatus & Appliances.
- January/June 1951.
Popat Jamal & Sons, Broadway. (E.I.)
2778 Electrical Inst. Apparatus & Appliances.

July/December 1950.
Assoc. Elec. Industries (I) Ltd.,
Race Course Road, Coimbatore. (E.I.)
6431 Electrical Inst. Apparatus & Appliances.

July/December 1951.
Gordon Woodroffe & Co. (Madras). Ltd. P. Box. 42, Madras.
53813 Double pole, iron clad cutouts.

July/December 1950.
Mahomed Ebrahim & Sons Ltd., Mount Road, Madras.
67901 Domestic refrigerators complete.

January/June 1951.
General Electrical Co. of India Ltd., Madras.
471 Spares for Refrigerators.

July/December 1950.
General Electrical Co. of India Ltd., Madras. (E.I.)
471 Spares for Refrigerators.

January/July 1951.
Spencer & Co. Ltd. (E.I.)
5135 Elect. Inst. Apparatus & Appliances.

January/July 1951.
Spencer & Co. Ltd. (E.I.)
5135 Elect. Inst. Apparatus & Appliances.

July/December 1950.
General Electrical Co. (I) Ltd. Madras.
89203 Switch board.

The Crompton Engineering Co. (M) Ltd., 2nd Line
Beach. (E.I.)
2202 Electrical Table Fans.

South India Corporation Ltd. Cochin. (E.I.)
15695 Electrical Accessories.

K. S. Shivji & Co. Broadway, Madras. (E.I.)
1364 Electrical Fuses with spares etc.

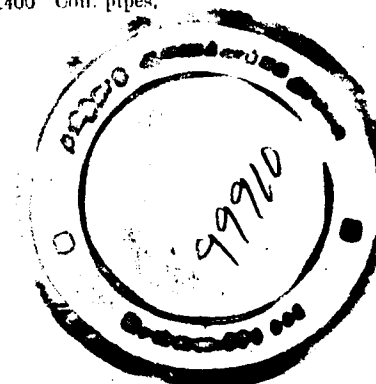
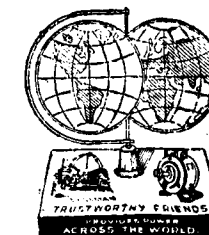
Volkart Brothers, Armenian Street, Madras. (E.I.)
10071 Paper Ins. armoured underground
cables 1/80, etc.

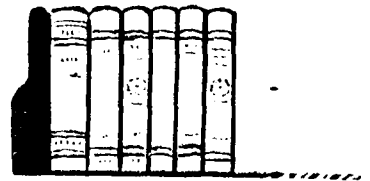
Simpson & Co. Ltd., Mount Road, Madras.
11966 Electrical Table Fans.

Seeyensee & Co. Madras.
42000 Transformers.

January/June 1951.
Madras Radio Co., Armenian Street, Madras. (E.I.)
10835 Electrical Inst. Apparatus & Appliances.

July/December 1950.
East Asiatic Co. (I) Ltd., Madras.
1400 Con. pipes.





Books & Brochures

"KNOWLEDGE IS POWER"

Electrical Engineers.

Published monthly by the American Institute of Electrical Engineers at No. 33, 39th Street, New York, 18 N. 7. It contains activities of the Institute, Industrial Notes and other Treatises on important topics about electricity.

The Proceedings of the Institution of Electrical Engineers.

Published in 3 parts, each in alternate months by the Institution in London. Part I is general, Part II is Power Engineering and Part III is Radio and Communication Engineering. The patron of the Institution is His Majesty King George VI. It contains important papers on important problems by eminent authors. It is very useful to highly qualified electrical engineers.

Hydro-electric Development and Engineering.

By FRANK KOESTER.

This is a practical and theoretical treatise on the development, design, construction, equipment and operation of hydro-electric transmission plants with about 500 illustrations. (D. Van Nostrand Company. New York and Constable company Ltd., London.)

This book of 454 pages is divided into 3 main parts. Part I which is concerned with the transformation of water power into electrical energy, consists of seven chapters dealing in investigation, design, dams, headrace, penstocks, power plant, mechanical equipment and electrical equipment. Part II deals about the transmission of high tension electrical current and is of three chapters on electrical transmission, substations and line protection. Part III (appendix) describes vividly the modern American and European Hydro-electric developments.

Owing to the inexhaustible coal supply for a long time, interest in hydraulic development has naturally been of tardy growth until recent years; and it is only lately that the respective Governments have taken steps toward the development and commercial use of water power resources and the preservation of forests. Of late the limited coal supply induced the utilization of the water resources. The progress in hydro-electric engineering was stimulated by the interchange of American and European ideas. To point out a few of the new features, the following are cited: Airshafts and equalizing chambers in connection with pressure tunnels, rapid and complete turbine tests by curtain methods and autographic recording device, thirty-thousand-volt generators and their efficient protective devices against lightning, unique combination of single and three-phase high-tension transmission systems from three-phase generators etc.

The object of the concerned engineer is not to design any particular machine such as turbine, generator, transformer etc., but to provide, by selection from different makes, an assemblage of machines and devices, each designed to perform its particular function in the most

economical manner, and to have the machines properly combined to form one complete unit for the purpose of generating and transmitting electrical current from water power on a satisfactory commercial basis.

In the Appendix, the Ontario Power Plant, the Necaxa Plant, Mexico, the Urftalsperre Plant, Germany and other important hydro-electric developments, the present standing of the American and European Hydro-electric Engineering, are described.

It is certain the engineer in general, architect student, manufacturer, promoter and financier will surely find a systematic and comprehensive treatise in the book, on hydro-electric plants from their inception to the delivery of power to the substation and consumer.

GENERAL.

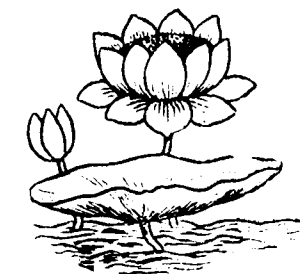
The Commonwealth to-day.

This is the first official handbook published by Professor K. C. Wheare, university of Oxford.

Since 1940 the changes in the nature and structure of the commonwealth have been tremendous. Not only have some of the changes been of deep importance and significance but the sheer number and complexity of the changes in this period have made it almost impossible for any one student of the subject to realise clearly at any given time just where we were or whither we were tending. The commonwealth of 1940 was appropriately described as "British" for of the 87

million people in its 5, possibly 6 members at time to time - the United Kingdom, Canada, Australia, New Zealand, the Union of South Africa and possibly Eire - the great majority were of British stock. In 1951, as a result of the attainment of membership of the commonwealth by India, Pakistan and Ceylon and the departure from the commonwealth of the Republic of Ireland, we now have a commonwealth of nearly 500 million people, more than 400 million of whom are not of British stock. The commonwealth of to-day can no longer be called 'British'. It is no longer a commonwealth of Kingdoms: it is a commonwealth of kingdoms and a Republic - the Republic of India - who recognise together the king as Head of the commonwealth. In spite of the differences of approach, no member of the commonwealth regards the citizens of another member as aliens and they have in one way or another provided for reciprocal privileges to be granted to each other citizens. High Commissioners of the Members of the commonwealth in each other's capitals have been accorded a higher status and are known by the title of "His Excellency" - surely a wise and over due reform.

The commonwealth as it stands in 1951 can be summed up in the words of the Prime Ministers (viz.) The United Kingdom, Canada, Australia, New Zealand, South Africa, India, Pakistan and Ceylon declare that they remain united as free and equal members of the commonwealth of Nations, freely co-operating in the pursuit of peace, liberty and progress.



News and Notes

"Whate'er the busy bustling world employs,
Our wants and wishes, cares and joys,
These the "POWER" of our times display,
And call them News and Notes, the hodge-podge of the day."

PERSONALITIES.

His Holiness.

The present Guru (68th in succession) of the Kamakoti Peetam, His Holiness Sri Sankaracharya is a true heir of Adi Sankara. The Kamakoti Peetam adorned by His Holiness had its origin at Conjeevaram (South India) as the central mutt of Sri Adi Sankaracharya who installed the other four mutts - Sringeri in the South, Badarkshetra in the North, Dwaraka in the West, and Jagannath in the East. Kumbakonam (South India) situated on the banks of the sacred Cauvery became the headquarters of the Central mutt in about 1729 due to disturbances and unrest around Conjeevaram and by the help of the then king of Tanjore.

His Holiness who is fifty years old was born of simple and pious Karnataka brahmins near Villupuram (South India). During his school career he became proficient in English, Tamil and Telugu. Installed in the holy Gadi in 1907, he became proficient by intensive study in the Vedas, Upanishads and other Scriptures as well as in Fine Arts and Music. His Holiness has travelled far and wide and met Mahatma Gandhi, C. R. Das, Babu Rajendra Prasad, Pandit Madan Malaviya at one time or other.

The Beacon Light to all in this suffering world, His Holiness sees divinity in all mankind and directs one and all to visualize God who is Truth, Love and Service, in the Universe. He beckons to the householder to live truly and happily and to be good and do good to others. He knows of no barriers to recognise Godliness in men and women of any faith. His life is simple and strenuous. The man of any faith and religion, the sick, the poor, the rich all alike have approach to him. Institutions started by him are many. The spiritual power in His Holiness revitalizes humanity in this hour of need, despair, unrest, egoism and conflicting ideals.

"Worship the Lord, worship the Lord, worship the Lord, O thou fool; when death approaches, ritualism will be of no avail".

—Sankaracharya

MATTERS

Inside India

Grow more food or Grow more fish or both? The third annual meeting of the Indo-Pacific Fisheries Council was held in Madras. It was inaugurated by Mr. K. M. Munshi and was presided over by Mr. J. D. F. Hardenberg. His Excellency the Governor of Madras, Ministers and other delegates attended. It was pointed out that 23 out of 30 grow more fish schemes were so far designed to develop inland resources and these schemes were granted loans and subsidies by the Government to the extent of about Rs. 23 lakhs. The conference discussed all aspects of fisheries programme.

The first biggest and cheapest census of Republic India took place between 9th Feb. and 1st March with the final check-up thereafter, covering scores of cities, hundreds of towns, and lakhs of villages and involving the detailed counting of 350 million people. The facts gleaned from the individual were recorded simultaneously in what is called the

National Register of Citizens. A new economic classification scheme is included in the tabulation. Each State was allowed to add one more of its own in the region, as for example, unemployment or fertility or disease etc. The census records information regarding (a) provisional total population (b) special groups (viz) Scheduled Castes, backward classes etc., (c) three main tables-general population table, economic table and social and cultural table. This nationwide enterprise cost Rs. 43/- per thousand and was a success.

Save and Secure was the slogan of the celebration of National Savings Fortnight throughout India. The Madras programme was inaugurated by Mr. R. K. Shanmugam Chetti. This patriotic scheme was first started during the last war. The average collection per year had been about Rs. 20 crores. The target could easily be about Rs. 100 crores per annum. The urgent projects contemplated by Indian Government, included Agriculture, Transport and Communications, Fuel and Power, Industry and Mining, Social services like education, Housing and Health and cost about Rs. 1800 crores for which funds should be provided mainly through the National Savings Schemes.

The 31st annual session of the Institute of Engineers was held at Mysore. It was inaugurated by His Highness the Rajapramukh of Mysore and presided over by Mr. K. G. Bakhle, Chief Commissioner of Railways. The negation of the theory that the Engineer was born and not made was emphasized and it was pointed out that in this age of engineers, the engineer could play his part in winning the economic independence of the country.

Thought and Deed, their spirit of adventure in the Youth of the Nation, were emphasized by Mr. P. V. Rajamannar the Chief Justice of Madras in his convocation

address at Mysore. The Character of the intellectual and cultural enterprise, he pointed out, should be the aim and object of University education.

The international Cotton Advisory Committee had its session at Lahore and decided to employ technical experts to tour the various under-developed countries and help increase cotton yield in the country.

The first international industries fair under the auspices of the Engineering Association of India, Bombay and being patronised the Government of India and Bombay, is to take place at Lloyds Recreation Ground, Bombay from 1st April to 15th May. The whole world trade will be there. This is the biggest international industrial show which no trader can afford to miss. The other details can be had from the organisers of the fair.

The implementation of the Indo-Pakistan agreement for the restoration of the movable property of evacuees and Indo-Pakistan Trade Conference at Karachi really mark a good sign of relationship between the two countries.

The no. of banking companies in the country at the end of March 1950 was 464 (excluding loan companies) which compare with 14,675 in the United States. Assessed in terms of the national income, the banking deposits in India are very low, which forms an explanation of the business of banking. Around 45 per cent of the deposits is owned by business. The Indian banks do not subsist on the level of agricultural production, for agriculture accounted only for 2.3 to 4.7 per cent of the total advances. Foreign experts have held the view that India has not been under-banked. The balance sheet assets of the Indian banks do not differ very widely from those of banks in other advanced countries. But at the present level of economic activity the scope for

expansion is necessarily limited. Two important influences at present further tend to destroy the pace at which existing institutions can grow. One is the growing opinion in favour of amalgamation; and the proportion of advances to deposits has been known to decline rapidly in the Indian system, as banks grow in size and influence. The second factor is Banking Disputes (Industrial Tribunal) Award. The main implication of this is that no bank which does not have a capital and reserve and deposit liabilities of more than twenty-five crores of rupees will find it very profitable to open additional branches.

The foundation stone of the Central Building Research Institute at Roorkee was laid by Mr. Sri Prakasa, Minister of National Resources and Scientific Research of Government of India. This was one of the 11 national laboratories that were being established by the Council of Scientific and Industrial Research for finding out proper and practical methods for making life worth living. This Institute would help the housing problem of the common man.

The year 1949 was a good year for life insurance business. An all-round increase in the activities of the Indian Insurance Companies was seen. The no. of policies increased by 59,000 to 544,000, the sum insured by Rs. 15.45 crores to Rs. 135.35 crores and the premium income by Rs. 96 lakhs to Rs. 7.74 crores. The non-Indian insurance companies saw a decline in the no. of policies but a slight rise in the sum assured. The Indian companies made a total revenue income of Rs. 41.10 crores, out of which the 'outgo' including claims and surrenders accounted for Rs. 22.97 crores and the balance of Rs. 8.13 crores represented an increase in the life funds. Under non-life insurance business, the Indian Companies had a premium income of Rs. 10.38 crores com-

prising Rs. 5.37 crores from fire business, Rs. 1.94 crores from marine business and Rs. 3.07 crores from miscellaneous business. Two defects in the line are to be avoided, (1) Malpractices and (2) the mushroom growth of agents.

The Central Drug Research Institute which was the 7th link in the chain of 11 national laboratories was opened by Pundit Nehru at Lucknow.

The Indian Parliament has acquired a new Deputy Leader in the person of Maulana Azad. The preventive Detention (Amendment) Bill was passed at New Delhi. The measure bringing about the uniformity in Criminal Procedure Code throughout the country was also passed. The Hindu Code Bill had its select committee's scrutiny and suggestions. The Bill applies to Hindus only in the whole of India. The retention of the Mitakshara system in place of the Dayabhaga principle of inheritance was suggested. Both the Aliyasanthanam and Marumakkathayam systems are also to be retained. The code revolves around the status of women. A gradation in status regarding daughters is maintained, an unmarried daughter receiving only half the share of the son and a married daughter one fourth with the proviso that the brother has the right to buy off the sister's share compulsorily. The Bill also makes provision for divorce 3 years after the date of marriage. The clause by clause discussion in the Indian Parliament had a good deal of fun and frolic in and around the law member Dr. Ambedkar.

Mr. Munshi's decision to restore 12 oz. rice ration to manual workers seems to do little to relieve the distress of the nation as a whole. The supply of one million tons, in the first stage, of foodgrains from the U.S. is becoming more or less definite though the conditions attached appeared irksome.

Nearer home, the Madras Government allowed Rs. 50 lakhs kist remission for drought areas in the State. The Madras Corporation has resolved to increase the rate of property tax on three categories of properties with effect from 1st April. A cut in power supply by 15 per cent. from Feb. 15th throughout the hydro-electric areas of the Madras State was announced with suitable and convenient principles. Mr. M. Bakthavatsalam, Minister for Public Works, declared open a thermal station at Samayanallur (8 miles north of Madurai City) designed to be an auxiliary station for supplementing the power output in the Papanasam hydro-area especially during the dry months. The minister said that the Electricity Department is already working out schemes for the next Five Year Plan which in broad outline will comprise.

Tungabhadra Hydro-Electric Scheme	35,000	K.W.
South Kanara Extension	6,000	K.W.
Kundah hydro scheme	100,000	K.W.
Periyar hydro scheme	50,000	K.W.
Madras Thermal extensions	30,000	K.W.
Machkund hydro extensions	20,000	K.W.

Inside Europe

The Big Four Power Conference between France, Great Britain, the United States and the U. S. S. R. was urged by the Soviet at an early date. Though it was a qualified request, the hopes for settling world's affairs were expected to come out of this conference. Peace talks or no, the West has assumed the burden of Rearmament and is getting back to war time conditions and controls.

The Prime Minister of Great Britain strikes balance between Man Power and Production, by his announcement of Britain's expanded and accelerated Rearmament Programme. It means that over the next 3 years Britain will spend 4700 million on defence or an average of 3,000 a minute every day and night. Nearly half the grand total will be used to

equip the Army, Navy and Air Force with the most modern weapons. The rest will be used for industrial expansion, machine tool purchase, payment of armed forces, civil defence and so forth.

Power from coal to the atom power to drive a nation's industry, will be on exhibition in Glasgow next summer as part of the Festival of Britain. A display of a hundred years progress in coal-mining, power production, shipping and engineering will lead to the dramatic feature on atomic energy which may in a few years displace present producers of industrial power. The Exhibition is to be held at Glasgow's Kelvin Hall from 28th May to 25th August.

Inside America

The present policy of America is extremely costly. President Truman has had to ask for \$ 10,000 million tax increase as a mere first instalment. America is giving active consideration to the incorporation of Spain whose importance has grown on the strategical plane into the Atlantic defence system. The U. S. has decided to send four more divisions, to the West European defence. The main obstacle to this defence has been that the powers concerned do not feel secure without German participation nor on the other hand dare to call a German army into being, while the Germans do not wish to share in defence burdens unless they are entrusted with a national army. The release of Alfred Krupp, the German rearmament King, is a sign of green light to be given to be German rearmament. Anyhow the Western rearmament has already begun to pass from the stage of blue-print to that of actuality.

Inside Asia

The United Nations Political Committee condemned Communist China's aggressor in Korea. India joined the Soviet block in voting against all parts of the United States

States resolution. But Peking rejected U. N. Decision as illegal. The ghost city of Seoul had changed hands three times already. The Korean see-saw has turned in favour of the U. N. forces. Once more the crossing the 38th parallel was to rise. Even Truman welcomed discussion on the point.

The All-Burma Indian Congress held its fourth annual conference in Rangoon. It emphasised the friendship and friendly intercourse between Indians and Burmans.

The first full-fledged session of the World Muslim Conference was held at Karachi. Mr. Liquat Ali Khan inaugurated. Amin el Husseini, the Mufti of Jerusalem presided.

King Tribhuvan of Nepal after his stay in India for about three months returned to Nepal. He announced constitution reforms for his state including the constitution of a council of ten ministers-five as the representatives of the people and the rest nominated by the Prime Minister-Jointly responsible to the throne. Thus a new era in Nepal's history has begun.

The consultative Committee for Economic Development of South and South-East Asia concluded its sitting at Colombo after adopting its report.

SPORTS

To be or not to be was the subject of the deputation that waited by the Madras Race Club on the chief minister with a memorandum which, inter alia, requested the Government to enable the Race Club

to continue their activities permanently. They pointed out that the activities of the club would go a long way towards ensuring the development of horse wealth of the country, would get a sizable income to the Government and would also provide employment to many. What is Life without Gamble-we wonder! The Government has decided to postpone the abolition for the time being.

Three Madras lady players were selected to represent Indian Women's Hockey Team to tour Europe.

England faced defeat at the hands of Australian Cricket team at Adelaide in the fourth Test, with the scoring of 206 by A. Morris for the Australia team.

The final and fifth test at Kanpur between Commonwealth Cricket Team and All India XI ended in victory for the former by a margin of 77 runs. The Madras player Gopinath justified his inclusion. On the whole it gave experience to the players, enthusiasm to cricket fans and entertainment to spectators at large.

The opening of the Technical Training College of Jalshalli (Bangalore) was done by Air Marshal I velant - Chapman, C-In-C of the Indian Air-Force. The object of the college was to make I. A. F. self-sufficient in technical training. This was followed by the second National Air Rally and Races at Kanpur under the Joint auspices of the Aero club of India and the Hind Provincial Flying club. J. G. Bhandakar became the holder of the Jawaharlal Challenge Trophy by winning the 1124 - mile Air Race.



Here & There

[Those who read the 'POWER' may be able to find here a fun and there a frolic, here a pinch and there a punch, here a soup and there a saucer.]

Do you know?

Prague, the capital of Czechoslovakia derived its name from the Sanskrit word Paragya (Prayaga) meaning the place of meeting. It is here where most of the questions regarding the Eastern and Western Europe are decided. It is one of the most beautiful towns of Europe which has revived its old gayness, charms and vivacity after World War II. The Czechs are best fed, dressed and housed people of all Europe.

Taller and Heavier.

The average American woman is taller and of height 5 ft. 2 inches and heavier and of weight 114 pounds.

A dining table refrigerator.

An Australian-designed combination refrigerator and dining table, the first of its kind in the world, was displayed at the Royal Show in Adelaide. Provision is made for air-conditioning of salads, fruits and other foods. Attached to the combination are power points for toaster, electric jug, hotplate for keeping tea or coffee pot.

Up and Down Philosopher.

"Top is Bottom,
Black is White,
Far is Near,
And Day is Night:
Big is Little
High is Low,
Cold is Hot,
And Yes is No".

Game of Bridge.

We come across many types of players on the bridge table. The talkative, the fault-finding, the hot-tempered, the perverted are a few specimens. If you want to read a person's character there is no better place than the bridge table for that.

Socialism.

Under Socialism, everything in life is like trying to write a letter with a post-office pen.

60 and 40.

Pastime at 60 should be planned at 40.

2 Jobs in a week.

A funeral undertaker can earn £1,000 a year if he has 2 funerals a week.

Skirts shorter but hair longer.

Tight-fitting skirts four inches shorter than the original; growing the hair several inches longer, brushed smoothly back and softly curled on the nape of the neck - is the New Look, the fashion for 1951 according to London designers.

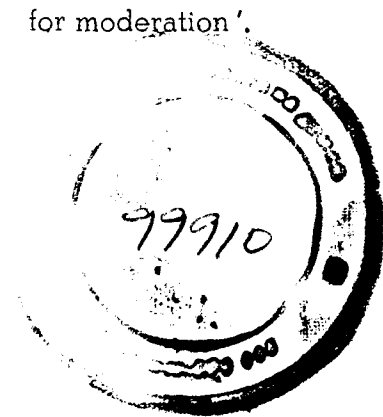
Tall Tips.

Lord Beaverbrook, the founder of a chain of great newspapers, has this to say to young men and women of to-day:

'Judgment, industry and health are qualities that lead to success. Never be afraid of change. In business, fluidity of judgment makes success. Succeed young and retire as young as you can. Dare all, yet keep a sense of proportion. Deny yourself all, yet do not be a prig. Hope all without arrogance, and you will achieve all without losing the capacity for moderation.'

Thought for the month.

"The sweetest lives are those to duty wed,
Whose deeds, both great and small,
Are close-knit strands of an unbroken thread,
Whose love ennobles all.
The world may sound no trumpet, ring no bells;
The Book of Life the shining record tells".
- Mrs BROWNING.



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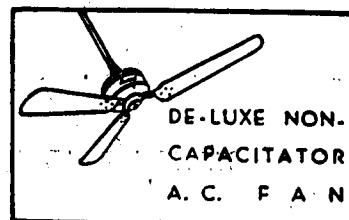
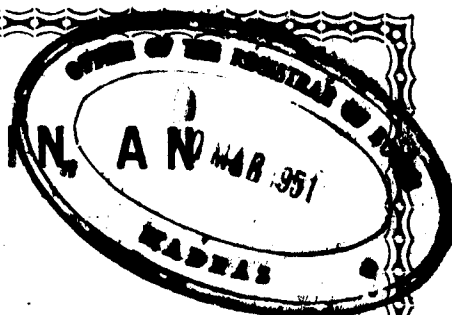
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